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THE DISEASES OF THE EAR.*—A REVIEW.

[Communicated for the Boston Medical and Surgical Journal.]

WE give the title-page of the English edition of this work in connection with the present article, for the reason that we acquired our knowledge of its contents from the London copy, received very shortly after its publication; and the American edition followed so immediately after the appearance in this country of the foreign one, that there was no time for "additions" and "emendations," (?) a process of treatment to which productions from the other side of the water are so often ruthlessly subjected. We conclude—knowing the honorable character of the publishing house which has issued it in this country—that there must have been some understanding between its managers and the author and his publishers; especially since the work was issued here so shortly after its appearance abroad, that it would seem this end must have been effected by the use of proof-sheets in advance. The only addition which Messrs. Blanchard & Lea have made to the title-page is the statement—"With One Hundred Engravings on Wood," with their vignette, and the name of the staid and upright Quaker City.

It was our good fortune, last autumn, to meet the accomplished author of the work we are now about to notice, and to enjoy several opportunities of witnessing his aural practice. In addition, we had the great advantage of inspecting his pathological specimens under his own explanations—an opportunity long to be remembered and valued. At this time, the proof-sheets of the present volume were passing through his hands, and we had the pleasure of cursorily examining them. The augury we then mentally made in regard to Mr. Toynbee's book, has been amply fulfilled. It takes precisely

* The Diseases of the Ear: Their Nature, Diagnosis and Treatment. By JOSEPH TOYNBEE, F.R.S., Fellow of the Royal College of Surgeons of England; Aural Surgeon to, and Lecturer on Aural Surgery at, St. Mary's Hospital; Aural Surgeon to the Asylum for Idiots; Aural Surgeon to the Asylum for the Deaf and Dumb; and Consulting Surgeon to St. George's and St. James's General Dispensary, London. London: John Churchill, New Burlington Street. 1860. Pp. 422.

the ground which an aural surgeon of very large experience should occupy in writing of the Diseases of the Ear—and that is the *purely pathological* ground. We mean by this, that all the volume teaches is eminently practical, and based upon thorough pathological observation; not merely the inspection of diseased ears during life and the treatment of their various conditions, as has often been done, to a great extent, empirically—but going to the bottom of the matter patiently, thoroughly, and with long-exercised and eminent industry; making *very numerous dissections*, and reasoning from pathological appearances more completely than has hitherto been done by any aural surgeon.

This process is just what has long been needed; and the results, embodied in the present elegant volume, will live as a worthy monument of the author's devotion to his chosen branch of medical and surgical science, and no less as a safe and inestimable guide to those interested in the same pursuit.

It is not necessary for us to occupy many lines in setting forth the great necessity which has long existed and been most deeply felt, for more extended investigation, study and knowledge in the department of aural surgery. The fact has been long acknowledged; yet few have been found, comparatively speaking, willing to bestow sufficient time and attention for the proper cultivation and understanding of this truly interesting and confessedly important department of our art. The consequence of this negligence has been only too evident. The most quackish performances have been held upon that wonderful and important organ the human ear; and the routine, or experimental, treatment—just as it might suit the practitioner's fancy—has been often as cruel and destructive as it was absurd and ignorant. We fear that many a *drum* has been cracked by charlatanic beating, and that many a *labyrinth* has suffered, for want of a clue whereby the patient might escape!

The few names distinguished as having really advanced either the science or the art of aural medicine and surgery, are familiar as "household words," and, in great measure, they are so from the fact of their paucity. Not to rehearse the merits of Kramer, Itard, Deleau, Pilcher and some others, it is now a fact that the practice of aural surgery in England rests mainly in the hands of some three practitioners in London; while, to our personal knowledge, the number of applicants for relief from various troubles of the auditory apparatus, in London alone, is almost incredibly large; nor are these ailments by any means found in the largest proportion amongst the very poor. If to the already celebrated names of Messrs. Toynbee, Yearsley and Harvey, of London, we add the equally respected name of Mr. Wilde, of Dublin, we have the actual professed corps of aural surgeons for Great Britain; and it is not, we believe, pretended that surgeons in general practice do much as aurists. Yet there seems no special

reason why this branch might not more frequently be joined with the usual duties of the general surgical practitioner. Although it certainly requires tact, carefulness, and no inconsiderable amount of study and preparation—contrary to what has hitherto been very generally believed—it would be for the advantage of every large community if at least one or two reliable men should fit themselves for managing the frequently obstinate, painful and disastrous affections of the ear.

If there are but few in Great Britain who command our attention as aurists, its neighbor-land—France—has a still less representation. Not to go out of Paris—virtually the medical as well as the political France—we were unable, six or seven months since, to find any *clinique* upon the diseases of the ear, or any one, except the justly celebrated M. Menière, who, in a special manner, attended to them. To this gentleman we hope to allude on some future occasion, as also to the aurists mentioned in connection with our author.

Premising that the proper understanding and treatment of the diseases of the ear is alike important to the profession and to the public—although on different grounds; and in the hope that this branch of practice, whether followed—as it is in some instances, here—in connection with general practice, or as a specialty—may be speedily and effectually taken out of the hands of pretenders—let us proceed to examine, comprehensively, what Mr. Toynbee offers us in furtherance of this desirable end.

We have said that his work is peculiarly a practical one, and, as such, especially suited to the wants of the aural or general surgeon, actively engaged in his duties. The style, moreover, is clear, not overloaded with superfluous diction, not warped by partial views; but setting forth in an interesting manner the subjects examined. Another excellent feature is the very considerable number of well narrated cases, all excellently adapted to the illustration of the successive topics of the volume; while not the least valuable means employed for the same purpose, is the series of admirably executed engravings, nearly all of which are completely successful in explaining to the eye, what they offer upon the ear. In one or two instances, however, we have thought this end not perfectly attained; but, as a general thing, they are alike most creditable to the engraver and to the judgment of the author.

The Introduction opens with sentiments and declarations very similar to those with which we have, spontaneously, begun this notice. And here we may be permitted to offer one or two short extracts, which will present our author's views and our own at the same time. Referring to the neglect which aural surgery has experienced at the hands of the profession, Mr. Toynbee remarks:—"If we carefully survey the history of the rise and progress of aural as a distinct branch of scientific surgery, one main cause of the disrepute into which it had fallen may be traced to the neglect

of the pathology of the organ of hearing—a neglect that doubtless led also to the ignorance which has prevailed as to the structure and function of some of the most important of its parts.

"It is a question, however, whether the inherent difficulties of aural surgery are of a nature to prevent its being as thoroughly understood as the other branches of surgery. This question has been answered in the affirmative by some, on the ground of the deep and hidden situation of the larger part of the organ and the extreme intricacy of its structure. But surely the organ of hearing is not so much concealed from view as several others (the heart, for instance), of whose diseases we have a very clear knowledge; nor is its structure more complicated than that of the eye." The author then goes on to state that he considers the diseases of the ear not to be more difficult of diagnosis, nor, "on the whole, less amenable to treatment than those of the eye, the joints, or almost any other organ that can be named." This is encouraging language from an aural surgeon of such large and varied experience as our author.

The ear and its diseases are examined by Mr. Toynbee from without inwards—the natural and most obvious course. To the affections of the *External Meatus*, 113 pages are devoted; the subjects considered may be announced in the author's own words: "The two classes of disease of the external ear for which the assistance of the surgeon is sought, are—first, malformations, and, secondly, various kinds of inflammation: to these may be added cases of cysts and tumors, which are, however, comparatively rare."

Referring to "Malformations," "Rudimentary Ears," &c., the author mentions the instance, related by Mr. Wilde (from Cassebohm), of a child which had four ears; "two placed naturally, and two lower down in the neck: in this instance there were two petrous portions to each temporal bone."

The most thorough consideration is given to the affections of the external meatus; and, in Chapter III., we have, in addition to a comprehensive anatomical description of the osseous, and of the membranous, meatus, a satisfactory detail of the means and manner of exploring the external ear, together with apposite and well-executed illustrations, both of the necessary instruments, and of the method of using them. In Chapter IV., the subject of Foreign Bodies in the meatus and their removal therefrom, is duly considered. This is an important topic; and since every surgeon is liable, often, to be called upon in such emergencies, it behooves all to understand, not only the anatomical relations of the parts involved, but also the methods remedial of such difficulties as frequently occur in this class of aural affections. Mr. Toynbee is careful to warn the aural surgeon against proceeding, rashly, to make efforts at extracting a foreign body *supposed* to be in the external meatus, before ascertaining by ocular inspection that it is really there. Much mischief may be done by blind pokings and useless syringing. "When a patient is suspected of having a for-

eign body in the ear, the first step of the surgeon is to make a careful inspection of the tube, in sunlight or with the speculum and lamp, with the view of ascertaining whether there really is anything present. In a great number of cases, having explored the whole of the meatus, and seen the membrana tympani, he will be able to assure the patient or the friends that no foreign substance is there. For want of this pre-inspection, lives have been destroyed in attempting to extract from the ear imaginary bodies which had never lodged there." (p. 37.) This caution should prove sufficient to all medical men; especially when it is known, as our author testifies, that foreign bodies may remain for a long time in the meatus externus with entire impunity. And if it is necessary to put practitioners upon their guard in this matter, how much more is it incumbent upon us to lose no opportunity of dissuading patients and their friends, from aggravating the difficulty, in these cases, by persistent and often violent attempts at dislodging foreign bodies, which they almost invariably succeed in impacting deeply and out of sight in the passage, perhaps dangerously compressing the *membrana tympani*. A woman lately came to us in great distress of mind, and out of breath with running for nearly half a mile, imploring that no time might be lost by us in visiting her daughter—a grown-up girl, who should have known better—who had pushed a pin into the meatus externus and lost her hold of it. We directed the woman to go back as fast as she could, in order to prevent any efforts being made by the patient or her friends at extracting the pin, and assured her *that* was the most important point. "Ah," said she, "then it's as bad as it can be, for they've been *jagging* and poking at it this half hour"—and off she ran. The pin, which had been in plain sight at first, was completely out of view, and was extracted, not without difficulty—the point being seized by forceps, through a speculum.

Mr. Toynbee very judiciously advises that all foreign bodies, whose nature will admit of it, be *washed* out by a stream of warm water from the ear-syringe; thus avoiding all unnecessary use of instruments for direct extraction.

Chapter V. contains very important information upon the diseases of the Dermis; and in the next Chapter the author goes thoroughly into the subject of Polypi. We must unwillingly pass over these subjects, with the single remark that both Chapters are full of instructive matter and have well repaid us for a careful perusal. Such will, we are confident, be the experience of all who shall read them as thoroughly as they deserve.

The subject of Tumors in the External Meatus is next examined. Two classes of tumors, as distinct from polypi, are mentioned—Osseous and Molluscous tumors. The former Mr. Toynbee considers—contrary to our previous impression—to be "of no unfrequent occurrence." These tumors generally spring from "about the middle third of the passage." There are several excellent il-

lustrations, both of the osseous and of the molluscous tumor, accompanying this portion of the text; and the cases related are exceedingly valuable. Indeed, the narration of illustrative cases throughout the work is one of its peculiar merits; and gives to it, as we have already intimated, an eminently practical character.

Mr. Toynbee first met with the molluscous tumor "when making dissections of the ear." These tumors arise from "the dermis of the meatus," and grow to a very large size, not only filling the passage, but pressing upon the bone so as sometimes to cause absorption thereof. Mr. T. has "met with cases in which the tumor has extended into the cerebral cavity. These cases are liable to be overlooked, and classed with those in which there is a simple accumulation of epidermis in the meatus." (p. 119.) The importance of recognizing and properly treating these cases is sufficiently evident. Removal of the mass and abundant ablution by the syringe, are our author's directions.

The remarks on the various diseased conditions of the External Meatus are fitly concluded by a tabular arrangement, which presents the "morbid conditions disclosed by the dissection of 1013 diseased ears." Of these, the large number of 71 were referred to ceruminous collection; while 14 cases presented bony growths, and the meatus was "much contracted."

The next large division of our author's subject is the Membrana Tympani—its structure and its pathological conditions. Mr. Toynbee has, for a long time, been making the most elaborate dissections and examinations of all the parts which enter into the structure of the ear, and perhaps in none has he entered more minutely into the anatomy of tissues than in his investigations upon the structure of the membrana tympani. For this he has often been ridiculed, and mainly on the ground that such minuteness avails nothing *practically*. In this verdict we can hardly join, since we believe that too much cannot be known relative to *structure*—both healthy and morbid, when disease is to be classified and treated.

Mr. Toynbee makes the following divisions of the tympanal membrane, and examines them in detail:—"1, The epidermis; 2, The dermis; 3, The fibrous layer, composed of—*a*, The lamina of radiating fibres. *b*, The lamina of circular fibres. 4. The mucous membrane." The whole portion which treats of the membrana tympani is interesting and highly instructive. It is evidently written *con amore*, and with the most faithful attention; while the cases which set forth the lesions described and the treatment adopted, are plain and practical. It is utterly impossible for us to follow our author through the minutiæ of his descriptions of the diseased states of the tympanal membrane, and his remedial suggestions; did space permit, we should like to extract many portions from this department of his subject. But we are sure that the extreme importance of the tissues involved—and whose lesions so signally impair the integrity of the little drum-mem-

brane in our heads, upon which such a constant tattoo is being beaten—will induce every practitioner who is called upon to treat aural affections, to investigate the whole subject, carefully, under our author's excellent guidance. And in doing this, let us forewarn them that there is *study* to be done; although the narration is most deeply interesting, and, in portions, truly fascinating, it is no mere romance-reading. Towards the last of his remarks upon the tympanal membrane, Mr. Toynbee describes the artificial membrane devised by himself, and alludes to the use of cotton by Mr. Yearsley. We can testify to excellent results from both these methods; but, in common, we believe, with many others, have found failure to be not unusual. With us, the cotton has been fully as satisfactory as the rubber-membrane. The devices which so frequently supply, with striking success, the lost membrane, are truly ingenious, and do great credit to their authors.

In Chapter XI., the Eustachian Tube is thoroughly investigated, as to its morbid conditions, and the remedial measures to be adopted. We remark a highly judicious and careful tone in regard to the exploratory measures to be put in force; and think that every one will allow, on perusing this chapter, that Mr Toynbee has adopted the happy medium; and, above all, that he is right in discountenancing frequent catheterism of the tube, and its hasty and often ungentle exploration by sounds. In this chapter, we particularly notice the attention directed by the author to the *general means* to be employed in certain affections of the Eustachian tube, and especially in those where its faucial orifice is obstructed by thickened mucous membrane. It is to be feared that these important *generalia* are too often neglected, and over-attention paid to topical measures—the importance of which latter is not likely to be overlooked by the judicious practitioner.

The operation for puncturing the membrana tympani, in certain affections of the Eustachian tube, is referred to, and its infrequent necessity noted. In *permanent* occlusion of the faucial orifice of the tube, or in similar adhesion of its walls, it is demanded; also in stricture of the osseous portions of the tube, and in those following fibrinous effusion, "and where the thickened mucous membrane of the tympanic orifice will not yield to other treatment." (p. 217.)

One of the most important portions of Mr. Toynbee's researches is that comprised in Chapters XII. and XIII., on the structure and affections of the Cavity of the Tympanum. Warned by our already extended observations, we cannot expect to be allowed space to refer, even, to the many points worthy of the most attentive consideration as discussed within the above named limits. We can barely indicate one or two topics which seem to us to have peculiar interest; at the same time premising that the whole of this subject is well set forth and deserves the closest attention.

With regard to *rigidity* of certain of the tissues here considered,

Mr. Toynbee encourages us to hope for better results than we had deemed possible; and, indeed, in very many affections of the aural apparatus, he takes a more hopeful view than we have, hitherto, dared to adopt. We, of course, set this down, with—as we trust—becoming modesty, to our far less experience and skill—hoping, at some future day, to emerge from a more clouded, into his brighter atmosphere of truly remarkable success.

Speaking of the *prognosis*, in certain cases of rigidity, anchylosis, &c., about the ossicles and ligaments, Mr. T. says:—"it may be laid down, as a general rule, that so long as the affection depends upon rigidity of the ligaments, or upon a slight expansion of the base of the stapes (and the surgeon can judge of the existence of these conditions during life by the symptoms being but little advanced), then there is every prospect that considerable amelioration may be effected, and the patient, in fact, be enabled to hear without any inconvenience, for experience has taught me that a rigid ligament may be relaxed, and an expanded bone be reduced in size." (p. 283.) We are glad to hear the latter statements, but is it uniformly easy to "judge of the existence of these conditions"?

The discussion of the question, "*Can sonorous undulations reach the labyrinth from the external meatus without the agency of the ossicles?*"—is an interesting one; and the "Experiments" introduced by Mr. T. are both scientific and satisfactory. The author's conclusions are: "*First*—That the commonly received opinion in favor of the sonorous undulations passing to the labyrinth through the chain of ossicles in the human ear, is correct. *Second*—That the stapes, when disconnected from the incus, can conduct sonorous undulations from the tympanic cavity to the vestibule. *Third*—So far as our present experience extends, it appears that in the human ear, sound always travels to the labyrinth through two media, viz., the air in the tympanic cavity to the cochlea, and one or more of the ossicles to the vestibule." (p. 298.) The author thus considers that a "simple disconnexion of the incus from the stapes, is not productive of any large amount of dulness of hearing."

Succeeding the above topic, the Mastoid Cells receive a due share of attention; and here the perseverance of our author in making thorough pathological investigations of the parts, *post-mortem*, and the valuable results obtained, are exhibited in a marked manner. The extreme importance of a thorough knowledge of what not infrequently occurs in this portion of the auditory apparatus, may be recognized in the statement of the "effects of chronic disease" in the cells. "1st. Suppuration in the lateral sinus, with or without secondary purulent deposits. 2d. Inflammation of the dura mater and arachnoid, and the formation of pus on the surface of the cerebellum. 3d. Abscess in the cerebellum." (p. 312.)

That very important—and, unless we mistake, too frequently

assigned—species of deafness, "Nervous Deafness," is treated of elaborately in Chapters XV. and XVI. This subject, the investigation of which is abundantly illustrated with cases, is divided, *first*, into those instances arising from shock to the *special* nerve-apparatus—as from concussion, cold, and "morbid poisons" (are not all poisons "morbid"?); and, *secondly*, into those which are due to disease of the brain accompanying local injury of the ear.

While the author's positions, in this portion of his work, are, as we have said, fully illustrated by interesting cases, we are struck with the excellence and fitness of some general remarks, which we venture to present as worthy of universal attention.

"Perhaps the most common cause of nervous deafness from physical debility is the want of proper care in the management of young persons, and particularly girls, when they are growing fast. In hospital practice, young nursemaids who carry heavy children, and whose night's rest is often disturbed, and youths just entering laborious situations, are found to suffer. Any cause, in fact, which reduces the nervous energy of the body to a state too low for the due regulation of the functions of the various organs of the frame, may be followed by a manifest depression of the nervous power of the ears, which shows itself not merely in diminished power of hearing, but often by singing and other sensations in the ear, and sometimes by severe pain like tic douloureux." The treatment recommended in cases where *debility* is the evident cause of nervous deafness, is what we should suppose it would be, viz., the best hygienic conditions possible to be secured, sufficient sleep, good food and a certain amount of stimuli, with tonics. Mr. Toynbee also recommends local stimulants to "be applied over and around the ear."

The work terminates with a short account of Malignant Disease of the Ear; with a chapter on the Deaf and Dumb, showing much research, and containing a great deal of very valuable information and interesting detail; and a page upon Ear Trumpets and their Use. An Appendix furnishes us with a complete list of the author's writings upon topics connected with the Ear and its Diseases.

In reiterating our favorable opinion of Mr. Toynbee's elaborate work, and most warmly recommending it to students and practitioners, it also behooves us to notice again, with the highest commendation, the elegant style in which both the English and American editions are put forth. Our surprise, however, has been excited by noticing many misprints, which, of course, are to be attributed to hasty or careless proof-reading; and we trust that if we indicate these, our motive will not be misunderstood, nor the act deemed supererogatory. It certainly is not a matter of indifference that a medical volume should be correctly printed; and we have remarked—of late, particularly—a negligence in this respect, in elegant English books, which cannot escape general notice. Messrs. Churchill and Renshaw must look to their laurels!

We need do no more than instance two of their justly celebrated and really beautiful "Manuals," lately published, to justify our remarks: viz., "The Practice of Medicine," by Dr. Barlow, which has several inexcusable typographical errors; and Mr. Druitt's last edition, in which our casual references, merely, have brought to notice several similar instances of carelessness. In Mr. Druitt's book, for instance, we have noticed "*mycloid*" for *myeloid*, p. 123 (English copy); "tomes" for comes, last line of page 128; "idiode" for iodide, 8th line of page 176; "arenic" for arsenic, 12th line of page 190; "Tic-Doloreux" for Tic-Douloureux, page 330; "wedicine" for medicine, page 434, 4th line; "Pirigoff" for Pirogoff, twice, pages 736, 737.

We think the typographical errors in Mr. Toynbee's handsome volume are, however, even more striking. Thus, to begin, we have an inverted V instead of an A in the word External (Contents, caption of Chapter II.); "mucous" for mucus, page 58, and page 159; "three week" for three weeks (p. 68, 4th line); "great restless" for great restlessness (p. 74, line 1st); "diaphonous" for diaphanous (p. 131, middle); "membrane" for membranes (p. 234, 10th line from foot); an error in grammar at page 244, 5th line, "condition * * are" for condition is; "polyhoid" for polypoid (p. 252, middle); "Histiology" for Histology (foot-note, p. 295); omission of the article *the*. p. 199, 10th line, between "both" and "long"; "membranus" for membranous (p. 339, 9th line); "*Fatal Deafness*" for "*Total Deafness*" (p. 350, 8th line); "sub-maxiliary" for sub-maxillary (p. 365, 5th line from foot); "tic-doloureux" for tic-douloureux, 14th line from foot of page 368; "spiculæ" for spicula (page 388, middle). The word "ivoid" (p. 402, 3d line from foot) conveys no idea to our mind—we suppose *ivory* may be meant, as it is used in connection with "whiteness." The word "diagnosed," instead of diagnosticated, is used constantly. In this error very many writers indulge, who would never think of writing prognose for prognosticate.

The above *errata* were noted in reading the book in course—not sought for—we think we deserve a commission for pointing them out! The American edition has the credit of having some of the errors corrected, but it doggedly repeats very many. No one will deny that the volume would be benefited by our process of lustration.

The work is one which not only commands the respect and admiration of the general professional reader, but it is indispensable to such practitioners as pay any attention whatever to the diseases of which it treats, and no professed aurist, of course, can consider his library complete without it. W. W. M.

Boston, July 23d, 1860.

TRAUMATIC INJURY OF BOTH EYES—OPERATION FOR RESTORATION OF VISION.

By Henry W. Williams, M.D.

[Communicated for the Boston Medical and Surgical Journal.]

Mr. ——, of Pawtucket, formerly a workman in a machine shop, lost his right eye some years since, in consequence of an injury from a piece of steel. This eye was nearly emptied of its contents, and the cornea became opaque; affording no hope of recovery of sight.

More recently, his left eye was struck by a nail, which cut through the cornea nearly at its centre, and wounded the iris and the crystalline lens.

When I saw him the condition of the eye was as follows: adhesion of the iris to the cornea, and of the capsule of the lens to the iris; obliteration of the pupil by these adhesions and by an opaque deposit; and loss of vision. He had perception of light only. As it seemed possible to remove the obstructions from the small portion of the natural pupil not adherent to the cornea, I determined to make the attempt, as vision would be better, if this could be effected, than through an artificial opening in the iris.

Ether was administered to the patient, to secure immobility of the eye, and the operation was performed on the 22d of May last, Drs. Coolidge, Slade and H. K. Oliver giving me their skilful assistance. A wound was made at the lower part of the cornea, and through this the fine canula forceps was introduced, and an attempt made to extract the seemingly firm tissue which veiled the limited area of the pupil. Instead, however, of removing the whole of a membranous mass, the forceps retained but a very small portion of capsule, and the remainder of the opacity was evidently composed of softened lenticular substance, which could not be grasped by the instrument.

In this condition of things I adopted another mode of operation, and introduced a very fine needle through the sclerotica, to break up the crystalline as completely as possible and lacerate the posterior capsule.

He recovered from the operation without accident, and at the end of a few days was allowed to return home to await the absorption of the fragments.

On the 16th instant the patient returned to *see* me, unaccompanied by any guide, and perfectly able to find his way from Pawtucket without assistance. I found a perfectly clear opening occupying what was formerly the inner side of the normal pupil, and, though its size was limited, it was sufficient to enable him to see large objects without difficulty, and even to tell the time by my watch, without a cataract glass. With a glass of four and a half inches, however, he saw much more clearly, and with a glass of two inches' radius he could read the finest print.

As I had encouraged the patient only to hope for sufficient vision to allow him to guide himself, on account of the very unpromising and complicated condition of the eye, we could not but feel the highest gratification at this very successful result, which restores him to usefulness.

33 *Essex Street, July 20th,* 1860.

DURATION OF GESTATION IN A MEDICO-LEGAL POINT OF VIEW.

By B. L. Dodd, M.D., of Newark, N. J.

There is very little certainty regarding the precise duration of gestation in the human female. Fortunately, however, cases are quite rare, in which the legitimacy of a child is to be determined by the period of gestation. Yet, when such cases occur, they must, from the very nature of the case, cause great embarrassment to the medical witness. In view of this, it is very important that we should possess accurate data of all the facts derived from analogy or otherwise, bearing upon the subject.

To fix the "legal limit" of gestation is no easy task. In France 300 days are allowed. Dr. Simpson, of Edinburgh, uses the following language: "I believe our best criterion for fixing the 'legal limit,' or ultimate possible period of gestation in the human female, will be derived from careful and repeated observations upon the ultimate period of gestation in the cow; allowing always for the difference of four or five days of excess in the normal period of pregnancy in the cow, as compared with the human mother."

Acting upon this suggestion, I have collected the subjoined carefully recorded observations of the periods of gestation in 66 cases, of 13 cows, extending over a period of thirteen years.

Time of Gestation of Mr. J. R. Burnet's Cows—1844 *to* 1859.

1. Dolly—
   1846, 284 days, heifer.
   1847, 288 " bull.
   1848, 282 " heifer.
   1849, 296 " bull.
   Sold.
2. Molly—
   1844, 285 days.
   1845, 285 " bull.
   1846, 291 " "
   1847, 291 " heifer.
   Sold.
3. Suky—
   1844, 288 days, heifer.
   1845, 276 " "
   1846, 285 " bull.
   1847, 280 " "
   Sold.
4. Lilly—
   1844, 287 days, heifer.
   1845, 285 " no sex given.
   1846, 284 " heifer.
   1847, 288 " bull.
   1848, 293 " heifer.
   1849, 295 " bull.
   1850, 290 " "
   1851, 288 " "
   1852, 292 " heifer.
   Last calf at 13 years old.
5. Jenny, large brindle cow—
   1st calf at 3 yrs., 1847, 281 days, bull.
   2d " 4 " 1848, 281 " "
   3d " 5 " 1849, 286 " "
   4th " 6 " 1850, 283 " heifer.
   5th " 7 " 1851, 287 " bull.
   6th " 8 " 1852, 282 " heifer.

7th calf at 9 yrs., 1853, 284 days, heifer.
8th " 10 " 1854, 284 " "
9th " 11 " 1855, 288 " bull.
10th " 12 " 1856, 289 " "
11th " 13 " 1857, 282 " "
Butchered. This cow is daughter of No. 4, Lilly.

6. Sally, white cow—
1st calf at 3 yrs., 1848, 284 days, bull.
2d " 4 " 1849, 290 " "
3d " 5 " 1850, 292 " heifer.
4th " 6 " 1851, unknown, bull.
5th " 7 " 1852, 278 days, "
6th " 8 " 1853, 279 " heifer.
7th " 9 " 1854, 276 " bull.
8th " 10 " 1855, 279 " heifer.
The following spring, this cow died, before calving. Is daughter of Suky, No. 3.

7. Polly, out of Molly, No. 2—a mischievous black cow—
1st calf at 3 yrs., 1850, unknown, bull.
2d " 4 " 1851, 286 days, "
3d " 5 " 1852, 280 " heifer.
4th " 7 " 1854, 283 " bull.
5th " 8 " 1855, 290 " "
Butchered.

8. White-face, out of Dolly, No. 1—
1st calf at 2 yrs., 1850, 288 days, heifer.
2d " 3 " 1851, 277 " "
3d " 4 " 1852, 293 " bull.
4th " 5 " 1853, 282 " "
5th " 6 " 1854, 284 " "
Sold.

9. Rose, brindle, born in 1851, from White-face, No. 8—
1st calf at 3 yrs., 1854, 282 days, bull.
2d " 4 " 1855, 276 " heifer.
3d " 5 " 1856, 281 " "
4th " 6 " 1857, 284 " "
5th " 7 " 1858, 276 " bull.
6th " 8 " 1859, 287 " "

10. Cherry, lean, red cow, 1853, from Sally, No. 6—
1st calf at 2 yrs., 1855, 274 days, heifer.
2d " 4 " 1857, 279 " bull.
3d " 5 " 1858, 273 " heifer.
4th " 6 " 1859, 279 " bull.

11. Suky, yellow, 1855, from Sally, No. 6—
1st calf at 2 yrs., 1857, 275 days, heifer.
2d " 3 " 1858, 279 " lost.
3d " 4 " 1859, 281 " bull.

12. White-face, from Rose, No. 9, 1854—
1st calf at 3 yrs., 1859, 285 days, heifer.

13. Sophy—mischievous red cow, bought at a vendue, at 4 years old, in 1856. Time with first 2 or 3 calves unknown.
4th calf at 7 yrs., 1859, 275 days, bull.

The time of gestation in 66 cases, varies from—

273 to 293 days with a heifer calf.
276 to 296 days with a bull calf.

From these tables, it will be perceived that nothing like uniformity exists; the difference between the longest and shortest periods being twenty days, while, at the same time, it will be observed, that there is considerable difference in the same individual at different gestations; this amounts, in No. 1, to 14 days. These tables also show that, contrary to the popular opinion, the age of the cow has very little, if anything, to do with the length of the period of gestation, but that this depends rather upon the idiosyncrasy of the animal; some yielding a higher average, and some a lower. Another fact, deducible from these observations, is that the average length of gestation is longer by three days in bull calves, than in heifers.

The French law puts the legal limit of gestation at 300 days. If we take Simpson's position, deducting an excess of four days, the present tables would bring the legal limit in the human female to 293–4 days. I shall continue these researches, and they will in due time be recorded.—*Med. and Surg. Reporter.*

PRINTING ON TINTED PAPER.

Mr. Streatfield, the editor of the "Ophthalmic Hospital Reports," gives the following reasons for printing that work on tinted paper. Mr. Babbage made the observation that colored paper is more favorable to distinctness than white. He subjected the matter to experiment by printing a page on paper of various shades and colors. Almost all those consulted agreed in giving the preference to the colored papers; but the particular tint was not so unanimously fixed upon. Yellow appeared to have the preference. Several editions of Mr. Babbage's "Table of the Logarithms" have been printed on the *same* yellow paper; some have also been issued on white paper, but the former are always most in demand. A gentleman much in the habit of using logarithms, ordered of his bookseller Mr. Babbage's work, and unexpectedly finding it printed on colored paper, he was much disappointed; but afterwards he was so much pleased with it, that he wrote to Mr. Babbage, saying, that whereas he had only been able to use his eyes at night with books printed on white paper for an hour without resting them, he could, with the new book, continue for three hours without exertion. Mr. Streatfield believes that as the yellow paper of Mr. Babbage's book is so pleasant for candlelight use, so that now used for the "Ophthalmic Reports" is better for ordinary daylight. He believes that the color should be deeper in proportion to the size of the type, for he has observed that large placards on paper of a darker shade than could be used for any printed book, are very easy to be read. There appears, therefore, to be more philosophy in advertising posters than was dreamt of. Mr. Streatfield does not know why it is thought desirable to obviate the yellow color of some artificial light, and yet that the yellow-covered paper is most agreeable for reading; if it is so—and Dr. Wilson says, "Yellow is unquestionably the color most *visible* to all eyes,"—the reason remains to be proved; but it has occurred to him, that the organ of vision only requires for its use the luminous rays of the spectrum, not the heating or chemical rays, which, no doubt required for our health in other ways, are not necessary for seeing. Yellow occurs near the centre of the spectrum—i. e., away from the heating and chemical rays (farthest from the latter); and green, which, next to yellow, seems to be pleasantest to read with, is next to it in the spectrum, and *equally* remote from its heating and chemical extremities, where, moreover, it appears that the colors most fatiguing to the eye are found. The printers remark that the new paper "takes the ink" particularly well—a fact of some importance where wood cuts are concerned. The subject is evidently one of great practical interest, and deserves careful scientific and experimental study. The curious phenomena of snow-blindness are interesting in relation to this subject.—*Lon. Lancet.*

NEW APPLICATION OF CHLOROFORM IN NEURALGIA AND IN CERTAIN RHEUMATIC COMPLAINTS.

[At a meeting of the Medico-Chirurgical Society of Edinburgh, Mr. Little, F.R.C.S.E., of Singapore, made the following communication, which we reprint from the *Edinburgh Medical Journal* for April, 1860.—Eds.]

During my residence at Singapore, East Indies, I was at one time in the habit of using liquor ammoniæ to produce an immediate blister, when instantaneous counter-irritation was thought necessary in certain cerebral affections, &c.—a piece of lint soaked in ammonia being applied to the part, and covered with oil-silk, when in a few minutes so much irritation was produced as to raise a blister. In administering chloroform to my patients, I noticed that their lips were often partially blistered by it; and recollecting the mode of using the ammonia, I thought of trying the chloroform in the same way, but found that neither oil-silk nor gutta percha tissue would answer. I then used a watch-glass to cover the lint soaked in it, and with the best effect.

The manner of application is to take a piece of lint, a little less in size than the watch-glass to be used (which need not be more than two inches in diameter), to put it on the hollow side of the glass, to pour on it a few drops of chloroform sufficient to saturate it, and then to apply it at once to the part affected, keeping the edges of the glass closely applied to the skin by covering it with the hand, for the purpose of keeping it in position, as well as of assisting the evaporation of the chloroform. This may be done from five to ten minutes, according to the amount of irritation wished for.

The patient during this time will complain of the gradual increase of a burning sensation (not so severe as that produced by a mustard sinapism), which reaches its height in five minutes, and then abates, but does not entirely disappear for more than ten minutes.

To ensure the full operation of the remedy, it is necessary that the watch-glass be rather concave, that it be closely applied to the skin, and that the hand applied over it be sensibly warm. The immediate effect of the application is to remove all local pain in neuralgia, and relieve that of rheumatism.

Its effects on the skin are at first a reddening of the cutis, which in some cases is followed by desquamation of the cuticle; but this depends on the part to which it is applied, and also upon the susceptibility of the individual. In some cases, if the application is prolonged, a dark brown stain remains even for a week or ten days, the same effect as sometimes follows the use of a mustard sinapism.

In Singapore I have used chloroform after this fashion in various neuralgias of the face, in inflammations of the eye and ear, in

one case of angina pectoris, in several cases of neuralgia affecting the abdominal parietes, in lumbago, dysmenorrhœa, and in pain attending congestion of the ovary, &c.

Personally, I can testify to its great efficacy in two severe attacks of rheumatic inflammation of the eyes, in which the pain came on periodically about 3, A.M., with such severity that I thought the loss of sight itself would be preferable to its continuance. All other remedies, such as blisters, leeches, opium externally and internally, belladonna, &c., were of no avail in soothing the pain; water, almost boiling, applied by a sponge, giving only a little relief. I then thought of this use of chloroform, remembering how much it had benefited my patients in other similar affections. The first night, the application of it to the temple relieved the pain in ten minutes; on its return the next night, the application again relieved it; and four times only was it required to remove completely the local pain; allowing, in the meantime, constitutional remedies to produce their effect. Since my return to this country, I have recommended this remedy on several occasions to persons suffering from neuralgia of the face and head, and always with the same good effects as in India; and the other evening one of my domestics was quickly and effectually relieved by it of a painful spasmodic contraction of the platysma myoides muscle, which prevented her raising her head from the chest. The chloroform was applied as directed, with immediate benefit, and next morning she was quite well, though in previous attacks several days elapsed before relief was obtained. I have mentioned this method to several medical men of this city, who have found it of great benefit; and that it may be more extensively known, is my reason for now bringing it before the profession.

Dr. Keiller mentioned that this plan had been tried with success in his wards.

Dr. Wright had used chloroform for similar purposes, by pouring it into a bottle containing blotting-paper, and applying it over the affected painful part. He has found it sometimes produce vesication, and leave a mark on the skin; but it had been effectual in removing pain.

[Mr. Little has received the following letter from Dr. Sclanders, House Physician to Dr. Keiller in the Royal Infirmary.

ROYAL INFIRMARY, March 14, 1860.

MY DEAR SIR,—I have much pleasure in giving you the result of my experience in regard to the external application of chloroform in the way proposed by you. Soon after you made me aware of it, I saw a friend of mine, who suffered frequently from neuralgia of the left forehead. I proposed the remedy to him, and with the effect of immediately removing the pain. Owing to my having kept it too long applied, vesication ensued. Since then he has had no return.

I have since used it in several cases of neuralgia of the ovary and pleurodynia, as also in two cases of rheumatic pains in the joints, with marked benefit. I am, yours truly,

DR. LITTLE.] ALEX. SCLANDERS.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, AUGUST 2, 1860.

WHEN, six months ago, we assumed the charge of the MEDICAL JOURNAL, we could only express our wishes, hopes and fears. The first have been partially gratified, the last partially allayed. The second still support us, for we know that the resources of our city have not been exhausted. Still, at this season of the year, when all have a right to be inactive, our anxiety increases, and we are not at all sustained by the "wholesome stimulus of prospective want." Stimulus can be of no service to us, and our wants are immediate, imperative. This will be understood, if the nature of our labors is borne in mind. We are, as it were, workers in mosaic. We cannot furnish materials. These must come from other hands. To make a selection from these, and arrange them in the proper form, is our duty. To those who have aided us, we return our thanks; to those who have promised to do so, we still look.

VERMONT MEDICAL SOCIETY.—The Vermont Medical Society held its semi-annual meeting at St. Johnsbury, on the 26th and 27th of June, 1860, the President, Dr. E. A. Knight, in the chair. After the reading and acceptance of the minutes of the last annual meeting, the following gentlemen were elected members of the Society:—Drs. G. B. Bullard, S. Newell, James Lang, T. T. Cushman, G. M. Buffum, W. A. Weeks, and Charles S. Cahoon.

The forenoon of the 26th was passed in the discussion of various medical topics, in which the President, Drs. Newell, Brown, Frost, Bullard, Lang and others participated.

On the second day, among other interesting subjects discussed was the use of veratrum viride in pneumonia.

Dr. Perkins regarded this remedy as a very powerful one, and hence requiring care and discretion in its use.

Dr Phelps remarked that the suggestion was made years ago, that it seemed to act with peculiar efficacy in congestive cases. Some years since, he commenced the use of that medicine. He found that the addition of an acid to the tincture of the dried root, seemed to obtain its properties more fully. The freshly dried root he found more reliable. The medicine seemed more efficacious when given in the early stages of the disease. Though the veratrum is valuable, yet we must not suppose that the patient will certainly recover. Of the pathology of the disease, he said that the inflammation and congestion were not confined to the parenchyma, but involved also the mucous surface of the air-cells, and in those cases he regarded the medicine peculiarly applicable.

Dr. Clark regarded the remedy a valuable one in the early stages of the disease.

Dr. Bullard gave it to one patient, and was frightened by its effects. The patient got well, but he dared not try it again. He would now venture it, however, after hearing it so well spoken of.

Dr. Kellogg had not met with the marked beneficial effects that the representations of others had led him to anticipate. He regarded the medicine as a *ticklish one*, and caution was necessary in its use.

Dr. Knight's experience gave him much confidence in the remedy. He was convinced that cases had recovered which would have proved fatal had it not been for the veratrum. He would now scarcely know how to treat pneumonia without it.

Dr. Weeks inquired whether veratrum had been used in other diseases. He found good effects from its use in hæmorrhoids, by injection and unguent.

The discussion elicited the statement that the different preparations in the market were not made with the same article. The agent of Dr. Thayer told Dr. Knight that his preparation was made with garget or poke. Tilden's is made with hellebore.

Hypodermic Medication.—The subject of hypodermic medication is now attracting much attention. Much has been said about its great efficacy in neuralgic affections, where the effect is supposed to be a local one, though, at times, the constitutional symptoms are quite marked.

The results of experiments performed by Dr. I. Langer, of Davenport, Iowa, with sulphate of quinine, and reported in the *New York Medical Press* for June 16th, 1860, prove that this drug, at least, acts after its absorption. The article is quite lengthy, but the following conclusions contain the substance of the author's labors.

"1st—Certain agencies most powerful when hypodermically used, will become inefficacious when administered in stomach doses.

"2d—Sulphate of Quinine injected into the areolar tissue will act quicker, more powerful, and with equal if not with more certainty in subduing the primary symptoms of malarial infections, than when administered by the mouth.

"3d—Sulphate of Quinine injected under the corium even in large doses, one scruple at one injection, will not produce excessive cephalic symptoms.

"4th—Sulphate of Quinine injected under the corium, if necessary, during a paroxysm, will be followed with less aggravated symptoms than in a stomachic dose.

"5th—Where Sulphate of Quinine is indicated, the local irritation of the stomach and appendages constitutes no contra-indication.

"6th—The injections must always be made under the corium.

"7th—The solution must be rendered neutral to avoid unnecessary pains.

"8th—For the same purpose—also for dissolving the crystals sometimes precipitated in a solution of the Sulphate of Quinine—the temperature of the solution must be increased to blood heat and over.

"9th—Sulphate of Quinine hypodermically applied, is received into the system in a greater state of purity than when given by the stomach, where it may become contaminated or decomposed."

THE BRITISH ASSOCIATION AT OXFORD.—The "savans" of the Chemical Section have been solving the difficult problem of the deodorization of sewerage; per-chloride of iron has been decided on as the most useful of the agents suggested. The celebrated Leicester plan proves to be a failure, as the deodorized matter is useless to the agriculturist or farmer. The Physiological Section was engaged in some very important physiological experiments, originating with Dr. Pavy, Mr. Durham, and the School of Guy's Hospital, on the nature of "Sleep," together with the condition of the circulation of the blood in the brain during the unconsciousness of sleep. According to these researches sleep seems to be attended with a state of minus or lessened activity: if at least the experiments may be trusted, by which a portion of the covering of the brain in animals, like dogs, pigeons, etc., is removed carefully under chloroform, and in a week after the brain is watched during the state of sleep. Sleep is then observed to be a state of the brain where the blood does not circulate as it had done previously. Intimately bound up with this subject of sleep is the question also of "sea sickness," as both seem to depend on disturbed balance or unsettled equipoise of the circulation in the brain from external causes. Two papers, one on the Physiological Action of Aconite, and a paper by Dr. Kidd, of Sackville Street, London, on some new facts connected with the safe administration of chloroform, brought together large meetings of the section. Dr. Kidd showed that the alleged or supposed facts relied on as to diseased heart in relation to chloroform, as also the popular doctrine of accidents from valvular disease of the heart especially, are quite fallacious. Chloroform is perfectly free from danger when used with skill, as free from danger as any other active remedy. All the deaths from chloroform have been in trivial operations, such as tooth-drawing, from the chloroform having been applied in an ignorant or trivial manner. A very animated and highly scientific debate followed this paper, Sir Benjamin Brodie, who was present, agreeing in some measure with the views entertained by Dr. Kidd.

The closing meeting of this association took place on Wednesday afternoon, the President, Lord Wrotesley, in the chair. The Secretary (Professor Walker) read the grants of money appropriated to scientific objects by the General Committee at the Oxford meeting in June and July, 1860; the total amount being £1,395, including £500 for Kew Observatory, and £150 for committee on steamship performance. The noble chairman, in his farewell address, alluded to the success that had attended the meeting. Professor Philips announced that the meeting of 1861 would take place at Manchester, and probably in the month of August, and that William Fairbairn, Esq., C. E. F.R.S., of Manchester, had consented to preside.—*Scottish-Amer. Journal, N. Y.*

THE MEDICAL ACT (1858) AMENDMENT BILL.—This bill, which has just been printed, is evidently intended mainly to remove certain doubts which have arisen as to whether, in case of the acceptance by the Medical College of new charters under the altered names proposed in the Medical Act of 1858, the powers and privileges of these bodies would be fully preserved to them under their new charters. The bill accordingly expressly provides that though the Royal College of Physicians of Edinburgh should receive a new charter under the name of the Royal College of Physicians of Scotland, and though the medical

colleges in England and Ireland should also receive new charters under the altered names proposed in the Medical Act, they shall retain all existing rights notwithstanding their change of name. The bill also repeals the provision in the Medical Act which entitles any Fellow, Member, or Licentiate of the Royal College of Physicians of Edinburgh, or of the King and Queen's College of Physicians in Ireland, to receive the diploma of the College of Physicians in England.—*Scottish-American Journal, N. Y. City.*

Chicago Charitable Eye and Ear Infirmary.—We learn from the second annual report of this Institution, that during the past year *one hundred and seventy-seven* patients have been under treatment, making an aggregate of *two hundred and ninety-two* patients since the establishment of the Institution, two years since. These patients have all been from the poor and destitute classes of society.

The Cancer Poison.—Dr Lemarchand, formerly a naval surgeon, has just died at Landerneau (Department of Finistère, France), at the age of fifty-eight, in consequence of a puncture with a suture needle, which had lain some time in a wound made for the removal of a cancerous tumor.—*Lancet.*

The New French Codex.—The Pharmaceutical Society of Paris is at present preparing the materials for the drawing up of a new codex, or pharmacopœia, with a view to facilitate the work of the committee shortly to be appointed by Government for the publication of that work.—*Ibid.*

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, July 28th, 1860.

DEATHS.

	Males.	*Females*	*Total.*
Deaths during the week,	53	43	96
Average Mortality of the corresponding weeks of the ten years, 1850–1860,	46.2	41.5	86.7
Average corrected to increased population,	..	..	98.9
Deaths of persons above 90,	..	..	..

Mortality from Prevailing Diseases.

Phthisis.	Chol. Infantum.	Scarlet Fever.	Pneumonia.	Measles.	Smallpox.	Dysentery.
14	11	6	1	1	6	1

METEOROLOGY.

From Observations taken at the Cambridge Observatory.

Mean height of Barometer,	29.939	Highest point of Thermometer,	81°
Highest point of Barometer,	30.220	Lowest point of Thermometer,	54°
Lowest point of Barometer,	29.530	General direction of Wind,	Westerly.
Mean Temperature,	68°.0	Whole am't of Rain in the week	0.627 in.

Notice.—We are requested to announce that the Forty-first number of Braithwaite's Retrospect was mailed, on the 28th ult., from this office, to all members of the Massachusetts Medical Society whose names are on the Treasurer's book as having paid their assessments. Those who have paid and have not received the number, are requested to forward their receipt, or its counterpart, addressed to the Librarian, at the Medical and Surgical Journal office, and the work will be sent by return mail.

Books Received.—Ranking's Abstract of the Medical Sciences. (From the Publishers.)

Deaths in Boston for the week ending Saturday noon, July 28th, 96. Males, 53—Females, 43.—Accident, 2—apoplexy, 1—inflammation of the bowels, 1—congestion of the brain, 2—disease of the brain, 2—inflammation of the brain, 1—cholera infantum, 11—cholera morbus, 2—consumption, 14—convulsions, 4—croup, 2—debility, 3—diarrhœa, 1—infantile disease, 1—dropsy, 1—dropsy in the head, 2—drowned, 2—dysentery, 1—epilepsy, 3—erysipelas, 1—scarlet fever, 6—typhoid fever, 2—disease of the heart, 2—hernia (strangulated), 1—laryngitis, 1—disease of the lungs, 1—inflammation of the lungs, 1—marasmus, 3—measles, 1—old age, 1—palsy, 2—pneumatelectasis, 1—premature birth, 4—rheumatism, 1—scalded, 1—smallpox, 6—strangled, 1—tabes mesenterica, 1—unknown, 2—whooping cough, 1.

Under 5 years, 55—between 5 and 20 years, 9—between 20 and 40 years, 15—between 40 and 60 years, 11—above 60 years, 6. Born in the United States, 82—Ireland, 12—other places, 2.